1: Blackwood E-5 (1929-1930) 1935
ON6 Buka ON6
Kurtatchi

133 island. On the east side there are precipitous cliffs either dropping straight to the shore or leaving just enough space on the beach for [361] a row of native huts, fronting the open sea. A reef skirts this coast also, but close inshore.

131 The island of Buka is about thirty-five miles long, and eight or 133 nine wide at the widest part, narrowing very much at both ends. ●137 Its most northerly point extends almost to latitude 5° S., its longitude being 154° 40′. The interior of the southern half of the island is covered with thickly forested hills, formed of dolomitic limestone, fairly steep in places but of no great height, dotted with native villages. The northern half is flat, and its interior is used by the natives principally for their gardens, the villages here being confined to the coast. There are no rivers on the east side, but on the west the coast-line is broken by several small streams and one larger river, the Gagan, formed by the junction of two streams about a couple of miles from its mouth. It is lined by mangrove [134] swamps full of crocodiles, and provides the natives with abundance of river reeds to use for thatch in default of sago-palm which is rather scarce.

133 Bougainville is one of the largest of the Solomon Islands, about 160 miles in length with a width of 35–40 miles. This book is concerned with the inhabitants of its northern shore. At 'The Passage' the land is almost flat, but as one passes westwards there is a gradual rise, till about ten miles from the western end the cliffs have reached a height of perhaps 200 to 250 feet. They consist of dolo- [417] mitic limestone, dropping steeply to the sea, but climbable in many places with the aid of notched logs at the steepest parts (see Pl. 2 *a*). They are covered with vegetation wherever a crack or a crevice enables the smallest amount of soil to accumulate. A coral reef comprising many species, but largely composed of a variety of Hexacorallia,[1] lines the shore. At its outer edge great breakers crash incessantly on all but a very few days in the year, making it an exciting business to launch a canoe through the surf. Owing to the difficulty of approaching it by sea, this portion of the coast [361] offers little inducement to white settlers, and is occupied by a string of native villages, among them Kurtatchi, my head-quarters for nine months. Towards the north-eastern corner of the island

[1] For the identification of this and other geological specimens which I brought home I am indebted to Mr. C. J. Bayzand, University Demonstrator in Geology, Oxford.

1: Blackwood E-5 (1929-1930) 1935
ON6 Buka ON6
Kurtatchi

Except for this road, there are only single file tracks leading from village to village or to the taro gardens. Behind the villages there stretches for interminable miles the almost impenetrable tangle of large trees, small trees, shrubs, and rank undergrowth, well garnished with thorny creepers and hanging vines, which is characteristic of a tropical forest. Apart from the clearings made by the natives for planting, the only breaks in the maze of 'bush' are caused by treeless patches covered with imperata grass, often growing to a height of 3 or 4 feet. It is quite impossible to make any use of these patches as the grass overpowers everything. Even on the plantations no method has been found of eradicating it permanently. The natives burn it occasionally, but they know from experience that it is no use trying to grow anything in its place.

CLIMATE

I was not equipped for collecting meteorological data, but I made detailed notes in my diary every day as to the weather, and took readings from a thermometer (hung in the shade on my verandah) at fixed times as regularly as circumstances permitted. The result of these observations is shown in the diagrams. It will be noted that the range of variation as between the coldest and the hottest part of the day is much greater than that between the means for different months. This indicates that there is no marked change in the seasons, no period when growth is in a state of quiescence, as it is in winter in England. The trees are never bare (except the kapiok, which is an importation), but a few leaves are always falling while at the same time fresh buds appear. Instead of autumn tints there is always a touch of red or yellow in the breadfruit trees where some enormous leaf is ready to fall, making a patch of vivid colour in the midst of a mass of green. It follows that the people continue their daily round of hunting, fishing, cultivation of gardens, house- and canoe-building in much the same manner throughout the little-changing year, having no such well-marked cycle of activities as characterizes the lives of those living in countries with pronounced seasonal differences.

As can be deduced from their situation, the Solomon Islands have a tropical climate with a heavy rainfall. The rain usually comes in sharp bursts, often in the afternoon after a bright morning, and clears away rapidly. There may be several days with only a slight shower or two, but after such a period will come a

1: Blackwood E-5 (1929-1930) 1935
ON6 Buka ON6
Kurtatchi

give a name even to those which they say are of no use to them. Unfortunately, in many cases I was unable to identify the plants of which the native names were given to me.[1] Sometimes the same term will be used for a number of plants of similar habits of growth, e.g. *wanis*, fairly translatable by our generic word 'grass', and *kurits*, used for a hanging vine or creeper, often as a prefix attached to another word. There is a generic word for 'tree'—*no'on*, which also means wood, especially firewood (*kuip no'on*, to cut firewood, one of the women's daily tasks).

Some of the trees appear not to be indigenous. Mrs. Hadden told me that her father, Mr. Parkinson, the anthropologist, who was the first white man to live in this region (about forty years ago), introduced some of the citrus fruits and other useful trees, which have since spread rapidly throughout the area.

The natives cultivate coco-nut palms, areca palms, and bananas, as well as taro (*Colocasia esculenta*) and other vegetables (some account of their food plants is given in Chapter VIII). Bread-fruit trees and canarium almonds are highly prized, the position of each one is known, and they are always spared when fresh ground is cleared for a new taro garden. Some of the trees which go to make up the uncut bush yield a hard timber which is found useful by the resident whites for building and for piles, especially such as withstand the ravages of salt water. But the difficulty of transportation renders these of no commercial value. The natives use them for house-posts and other purposes, but prefer the soft-timbered trees for their canoes. The most striking objects in the bush are huge trees with enormous flanges buttressing their trunks, and the aerial roots of the banyans, which serve the natives as ridge poles for their huts. Several different kinds of palm and of bamboo are used for a variety of purposes. A big carophyllum tree is a frequent landmark on the lee shore, affording welcome shade under which the men sit mending their nets and the women making hoods or baskets or playing with their babies. A large fallen trunk on the beach at Petats was a favourite gathering-place for all. Parts of the shore are covered with mangrove swamps, which make landing impossible.

Of smaller growth, there are several kinds of croton and hibiscus,

[1] For the identification of some of them I am indebted to the authorities of Kew Gardens. A list of these will be found in Appendix III. Others I have recognized from the description given by Guppy.

1: Blackwood E-5 (1929-1930) 1935
ON6 Buka ON6
Kurtatchi

many other shrubs, a large variety of ferns and mosses, and innumerable fungi, some of which are eaten. Creepers and epiphytes of all kinds abound, but there are fewer orchids than are reported from other islands: a small white variety is the most common. The abundance of rattan and other thorny plants makes progress through uncut bush a slow and sometimes painful business, and as a path that is little used very soon becomes overgrown, no one ever goes any distance into the bush without a knife.

The bush is disappointing in its lack of colour. It is all too green. Not only are the flowers few and far between—partly owing to the fact that a native will never pass a flowering shrub without taking his toll of its blossoms to put in his hair—but the birds and the butterflies also are less brilliant than I had expected. There are some bright red and blue parrots, and the cockatoos, dazzlingly white in the sunshine, are conspicuous amid the foliage, but otherwise the birds are not striking, except the hornbill, with his extraordinary yellow beak and the whirr of his wings, which is one of the most characteristic sounds of the forest. There are several varieties of pigeon, called in imitation of its plaintive note, *kūrō*, and numbers of small birds, of which the most noticeable is a species of wagtail. Butterflies, though very large, are mostly black or brown, flecked or striped with white, but there is also a very beautiful black one with small iridescent bluish-green patches on its smaller wings.

The bush abounds with life, but nearly all the creatures are of small size. The largest animal is the wild pig, which if you meet it is usually far more frightened than ferocious, unless it is wounded, or has young. The cuscus opossum, or phalanger, which lives in the holes of hollow trees, attains to about the size of a large cat. Flying foxes in great numbers keep up their short sharp bark nearly all night, and what with them and the frogs, and some insect of the grasshopper tribe (called by the natives *nen-nen*, because its note sounds like these syllables repeated in a high-pitched voice), the bush is never silent except perhaps for an hour or so before dawn. Iguanas and all kinds of small lizards are plentiful, and there are also snakes, whether poisonous or not I cannot say. The natives are afraid of them, and kill them on sight, if possible, by beating them with a stick. The large coco-nut-eating land-crab (from Guppy's description I take this to be *Birgus latro*) is an odd sight. These natives do not eat it, as do others elsewhere,

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ON6 Buka ON6
Kurtatchi

2. *Flesh food*

262 Pig (*gū*)
Opossum (*mani*)
Flying fox (*tsūbak*)
Small variety of bat (*pupūtū*)
Iguana (*biro*)
Frogs, several kinds (generic term *kūra*) and tadpoles (*boboi*)
Insects of grasshopper species (*koka*)
Large white grub found in decaying wood (*pa'oa*)
Many kinds of birds (generic term *nōwan*)

3. *Sea food*

Many kinds of fish (generic term *ien*)
Many kinds of shell-fish (generic term *kesa*)
Crabs (generic term *kuri*)
Turtles (*gurut*)
Sharks (*kes*) (occasionally)

NOTES ON THE LIST OF FOODSTUFFS

1. *Vegetables, nuts, and fruit*

262 Taro (*Colocasia esculenta*, or *antiquorum*) may be considered the
244 staple food, since no meal, whatever else is included, is complete without it, and it will, if necessity arises, suffice for a meal by itself. But most people are not contented unless they have either fish or flesh as a relish (*kabu* or *warit*) to eat with it. Its cultivation occupies a very large proportion of the working time of both men and women, the men in clearing and fencing, the women in planting, weeding, and gathering. Many varieties of taro are known, differentiated by the colour of the tubers, or of the stalks or leaves, not according to taste or properties. One woman gave the names of twelve varieties in her garden, showing me each in turn from a heap she had just gathered, and pointing out their special characteristics. She said there were many more which she had not got in her garden.

137 The giant caladium, very similar in appearance to the cultivated
824 taro, except that it grows much taller, and that its leaves are much larger, grows wild in the bush. It is known as *wiar* ('bush taro').
[293] Its tubers are never eaten. The leaves attain a length of several feet, and are often used by the natives as umbrellas.

251 The women bring up each day from the taro garden only enough to last till the next day, or at most for two days. Probably because this quantity is as much as a woman can carry, no attempt is made to maintain a surplus store, although the tubers would keep for some time. One day the women could not go to the taro garden because some business connected with the *upi* made it dangerous

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ON6 Buka ON6
Kurtatchi

in the canarium almond, since it occurs in the European almond. If taro (a species of *Colocasia*) may be compared to dasheen (*Caladium colocasia*), it probably supplies A, B, and C, but only in small amount.

I regret that I did not pay more attention to the daily quantity of food consumed. In times of ceremonial feasting it is very greatly increased, especially as regards flesh foods. At such times every one eats to satiety, and the feast is considered eminently successful if a quantity of food is left over to lie rotting on the ground at its close. A typical meal for a man under ordinary circumstances might consist of five or six medium-sized taro tubers and one or two small fish, the other items appearing occasionally. The enormous preponderance of taro, which is the groundwork of every meal, would, one may suppose, result in an excess of carbohydrates in the diet,[1] but it is noteworthy that 'carbohydrate is the best material to have on hand for muscular activity', and that it is 'from the point of view of physiological economy, the most economical food' (Hutchison and Mottram, '33, p. 58). The protein content of the ordinary everyday meal is rather low, and there is probably a deficiency in the amount of fat provided, which perhaps accounts to some extent for the relish with which lumps of pig's fat are consumed when available.

While on a journey into the mountains of the Kunua district, starting some twenty miles down the west coast, I saw a patch of maize. I was told that it had originally been planted by some men who had brought it back with them on their return from working as indentured labourers. The coast people do not cultivate it, but they might well do so, as Mrs. Hadden was quite successful in her attempts to grow it on her plantation, proving that local conditions are not unsuited to it. In view of the high nutritive value and vitamin content of maize it might be of some benefit to the natives if facilities for obtaining seed could be provided for them; they might then be induced to cultivate and use it as a regular addition to their diet.

It is worthy of note that though the sago-palm grows in this district in considerable numbers, its leaves being much in demand

[1] Maiden (1889, p. 18) gives the following analysis, taken from a descriptive catalogue of the Japanese exhibits at the Health Exhibition, London, 1884: Albumen 1·427; Fat 0·080; Glucose 0·120; Starch 10·400; Pectose, &c. 1·154; Ash 0·387; Water 85·202.

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ON6 Buka ON6
Kurtatchi

137 824 for thatching huts, yet these people do not normally use the pith to make into sago such as is eaten by natives of other parts of the Pacific (Codrington, 1891, p. 320). They neither ate nor prepared any sago while I was with them, and on my questioning them about it said it was eaten only in times of scarcity, when the taro crop had failed. Their distaste for it in normal times is probably due partly to the trouble of preparing it, but also perhaps to the fact that they have already a more than sufficient supply of starch, of which sago contains a high percentage.

146 262

In general it seems justifiable to say that the diet of these people is not seriously defective either in quality or in quantity. From the standpoint of our own eclectic taste, it is somewhat lacking in variety, but this does not seem to trouble the native overmuch, although he is quick to appreciate unaccustomed additions, such as canarium almonds, when they are available. It will be noted that under the climatic conditions here obtaining, where the staple foods can be procured all the year round, the comment made by Dr. Richards (1932, p. 164) in discussing this question—that the diet of the savage, though monotonous during any one season, is subject to the most drastic changes, not only in quantity but also in quality, in the course of the year—hardly applies. The quality of the food of the Bougainville native remains approximately the same throughout the year; the quantity varies, not regularly with the seasons but sporadically with the occurrence of ceremonial occasions, during which, if at no other time, he gets as much to eat as his heart could wish for, and more than his stomach can conveniently hold.

WATER-SUPPLY

312 The villages in the mountains are well supplied with excellent water from streams, but the water-supply constitutes a very real problem in the case of the coast villages of N. Bougainville, except those fortunate enough to be situated near the mouths of the few rivers which run to the sea on the north coast. These are confined to its eastern portion. The people of the western part of the north coast are dependent upon the small pools which are found sporadically in the bush, and this supply they share with dogs, pigs, tadpoles, decayed matter, and all the other denizens of stagnant water in deep shade. A certain amount of decidedly brackish water can also be obtained by digging holes on the shore at low tide, to catch

1; Blackwood E-5 (1929-1930) 1935
ON6 Buka ON6
Kurtatchi

the seepings which run down the cliffs and percolate through the sand towards the sea.

It is the duty of the women, particularly the younger women and girls, to bring in the water in the morning and again about sunset (Pl. 36*b*). It is carried in coco-nut shells cleaned out for the purpose through one of the eyes. The outside of such shells is often polished by continual rubbing, and may be ornamented with seeds or shells stuck in with the 'putty nut'. They are always carefully rinsed before being filled. The hole is plugged with a stopper (*pipip*) made of a smooth leaf (of the plant called *gartan*) by folding it in an ingenious manner round the finger and tucking the ends in. These water-containers (Pl. 36*a*) are called *ruin*; the same word is used for fresh water generally and also means a stream. They are never used for sea-water, which is usually transported in lengths of bamboo (Pl. 37*a*). I have known men from the mountains walk many miles to the sea in order to fill as many of these bamboos as they could carry back with them, this being their only means of obtaining salt.

Ten or a dozen water coco-nuts will carry home the family's supply for the day. Not much of it is expended on personal cleanliness, but I have sometimes seen babies being washed by having the contents of one of the coco-nuts poured over them. Most of it is used for cooking, chiefly for boiling taro. These people do not, as a rule, drink at meal-times, but will take a draught from one of the coco-nuts some little time after eating. Water will sometimes be carried to the taro gardens for consumption in the course of the day's work, but the liquid from a green coco-nut is more often drunk on such occasions, being usually obtainable in the locality. One could not want a more refreshing drink, since the shell and the thick outer sheath keep the liquid cool under the hottest sun. On the whole they seem to drink comparatively little, especially considering the heat of the sun and the starchiness of much of their food. If a person is thirsty while walking through the bush, and cannot obtain coco-nuts, he will search for a special kind of plant with a leaf similar to that of a banana, the native name of which is *obus*. It grows in clumps, a number of rather thin stems close together. Their colour is greenish streaked with brown. By making a vertical slit in one of these stems a spurt of watery liquid will be obtained, with which, by putting the mouth close to the cut, thirst can be most refreshingly assuaged. There is another taller

1: Blackwood E-5 (1929-1930) 1935
ON6 Buka ON6
Kurtatchi

137 tree, also known generally as 'bush banana', of which the native name is *wirtsun*; the liquid contained in this is not good for drinking. Its trunk is black, much thicker, and consists of a single stem only. Neither *oban* nor *wirtsun* produces edible fruit, except for parrots. [824] The leaves of the former, but not the latter, are frequently used to cover cooking-pots in which taro, &c., is being boiled.

273 656 No fermented drink of any sort is manufactured, and fortunately the natives have no access to European intoxicants, traders and planters being forbidden by the Government to supply them with beer or whisky, on pain of heavy penalties. Their comments on the behaviour of drunken white folk are not flattering

MEALS AND MANNERS

264 Two meals a day are generally prepared, one in the morning, before setting out for the day's activities, and one at dusk, after returning from the taro garden, the bush, or the fishing grounds. There is much impatience if food is not immediately forthcoming when wanted. *'To to met a bios!'* is the exact equivalent of our 'I am dying of hunger!'

512 264 262 252 They begin their day at sunrise, but they do not immediately eat their meal. They will sit or stroll about in the sun, enjoying its warmth before it rises high enough to become uncomfortably hot. At their leisure the women prepare some taro, either by putting some on to boil or by uncovering the oven where it has been cooking slowly all night. Fish are often eaten cold, having been cooked the day before and put aside wrapped up in leaves, or they may be heated on the embers. A typical meal which I shared with them at this time of day consisted of boiled taro, a quantity of small shell-fish, boiled, the water in which these had been cooked, and two kinds of bananas, one boiled and the other roasted on hot stones.

512 264 After taking their time over this meal they disperse to their several devices, taking with them some cold taro in a coco-nut-leaf basket, to eat at intervals during the day or during rest intervals en route if they are going a journey. Any taro still remaining will be put into a similar basket and hung up in the rafters of the hut, where any member of the household can help himself whenever he feels inclined.

The second meal of the day is considered the principal one. The women set about preparing it as soon as they come back from

1: Blackwood E-5 (1929-1930) 1935
ON6 Buka ON6
Kurtatchi

great increase in the demand for land for commercial coco-nut plantations, it might become a serious problem. It is the practice of the Government, however, to consider very carefully all requests for land on the part of white people, and in view of the doubtful future of the copra market, the situation may never become acute. Apart from this it would be to the advantage of the natives to learn more intensive methods of using their land, so that the women might be relieved of the necessity of carrying heavy loads of taro several miles back to the village.

A piece of ground which has been cultivated and subsequently left untouched very quickly 'goes back bush', and soon becomes indistinguishable from the rest of the forest. Since the practice of continually changing the locality of the gardens has been continued for a very long time, probably little, if any, of the 'bush' in the north-western corner of Bougainville, where the soil is suitable for taro-growing, is now virgin forest. Most of it is covered with secondary growth, with very few really large trees, but with great quantities of undergrowth and of 'bush banana' plants, which grow very rapidly.

The clearing of the bush is done mainly by the men and boys; the women help by taking out the smaller undergrowth and by removing rubbish. The work of fencing is performed mostly by men. It is very necessary owing to the depredations of the pigs. When this has been done, the subsequent weeding and care of the garden is the women's business, but their menfolk will often give a hand to help them. The young married couple Matarē and Marotē frequently went off to weed their garden together. I sometimes used to go and do a day's work with them, or with other friends, gaining thereby not only useful information, but also the gratitude of the owner of the plot and some much-needed exercise. The following description of one of these occasions is included for the sake of the details it gives of a scene which, apart from my intrusive self, may be regarded as typical: 'This is being written in a taro garden, during a rest between two spells of work. We are sitting on a log under the shade of a banana palm, surrounded by taro plants at all stages of growth. A girl, somewhere in her teens, with a pipe in her mouth and flowers in her hair, is making holes in the ground with the sharpened end of a pole, while another girl drops taro stalks into them. Their bright red loin-cloths make a splash of colour in a picture that is otherwise much too green.